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ABSTRACT

This study examined whether children communicate themselves via visual images and whether adults can better understand children by viewing images they use to express themselves. An extracurricular course was designed to help students become familiar with computers and the Internet; objectives included creating a word document, sending and reading e-mail, scanning a picture, searching the Internet, and creating a World Wide Web page. Subjects were 12 students ranging in age from eight to 13 years. Action research methods were used to conduct the study. Children were observed searching the Internet and asked why they favored certain Web sites. They were also observed developing their Web pages and asked to explain their designs. After the students completed their Web pages, the researcher downloaded the images and categorized them according to the students' names and genders. The number of pictures, animations, background colors, and text colors on the Web pages were calculated. Results indicated that the children were especially attracted to Web sites with many graphics or animation, and that girls and boys used very different visual images for their Web page development. The Web page template is included. (DLS)

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Understanding Children Through Visual Images on Their Webpages

By:

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Understanding Children Through Visual Images On Their Webpages

Amy ShengChieh Leh

Abstract

Are eyes windows to the soul? Can one understand children through their webpages? This article reports on the experiences of an instructor who taught an Internet course to children and her research about the children. The research investigated the impact of visual images on children's Netsearch and their webpage development. The results revealed that (1) the children were especially attracted to websites with many graphics or animation, and (2) girls and boys used very different visual images for their webpage development.

Introduction

The five senses are essential for every human being because they are the channels for people to conduct communication with the world. Through these sensory organs, people perceive information from the world and express themselves to the world too. The saying "Eyes are windows to the soul" clearly states how crucial visualization is. Not only can visual images affect a person's emotion (Sava, 1981) but they also may reflect a person's inner world. Researchers like Mandel (1967), Fransecky and Debes (1972), Hewes (1978), Sava (1981), and Messaris (1994) address the importance of visual literacy.

Visual literacy is important because visual images can tremendously affect a person. They can move an individual to "an internal activity [emotion] which does not realize information perceived from the outside world as such, but transforms it to be meaningful to the relation of the individual to the world" (Sava, 1981, p.11). The individual can be stimulated and held by the emotion caused by the images (Mandel, 1967). Similarly, one can use images to vividly express himself/herself, and people can better understand him/her via the visual images he/she uses.

How do visual images affect children? Boeckmann, Nessmann, and Petermand (1988) and Golden (1990) suggested that correct images might enhance recall and improve comprehension. Buckle and Ward (1990) developed a course to teach visual images, tested it on 12- and 13-year-old children, and found highly significant gains in the children's understanding of a range of images. However, Gunter (1980) and Furnham and Williams (1987) reported that visual images might have a negative effect on recall.

Although the effect of visual literacy on learning is not certain, there is no doubt that visual literacy is important (Mandel, 1967; Fransecky & Debes, 1972; Hewes, 1978; Sava, 1981; Messaris, 1994) and can be taught (Sless, 1984; Buckle & Ward, 1990). Hewes (1978), after tracing the development of the visual system and its relationship with other sensory systems, claims that visual literacy is essential for learning, thinking, and communication.

Can children communicate themselves via visual images? Can adults better understand children by viewing images they use to express themselves? This article shares the experience of an instructor who taught an Internet course to young children and who conducted an action research study in the class to answer the questions above. The article starts with an overview of the course. It is followed by the research description and results.

Overview of the Course

The course was an extracurricular course offered at the Center for Academic Precocity at a large university in the United States. The class met two and a half hours in ten weekly sessions for a total of 25 hours. The subjects were 12 young learners ranging in age from 8 to 13 years.

The course was designed to help the students become familiar with computers and the Internet. The objectives included (1) creating a word document, (2) sending and reading e-mail, (3) scanning a picture, (4) searching the Internet, and (5) creating a webpage. Searching the net and creating a webpage revealed the visual world of the young learners; therefore, this article will focus on these two topics.

The class employed a variety of instructional methods. Behaviorists' methods, as identified by Ertmer and Newby (1993) and Heinich, Molenda, Russell, and Smaldino (1996), were used to teach basic concepts and skills. Constructivists' methods, as identified by Ertmer and Newby (1993), Heinich et al. (1996), and Bagley and Hunter (1992), were used to encourage the students' exploration after they acquired the basics.

Equipment

The hardware used in the class consisted of Power Mac computers and a scanner. Software included MS Word, Netscape, Netscape Gold, and Adobe Photoshop. The students used Netscape to search the net, Netscape Gold to create their webpage, and Adobe Photoshop to edit their images.

Instructional Philosophy and Methods

Different approaches were employed to teach this class. First, the instructor used the behaviorists' methods to teach the basics of net search including (1) viewing the document source, (2) adding and editing bookmarks, (3) saving a bookmark file into their disk and importing a bookmark file, and (4) searching the net using different search engines. Then the

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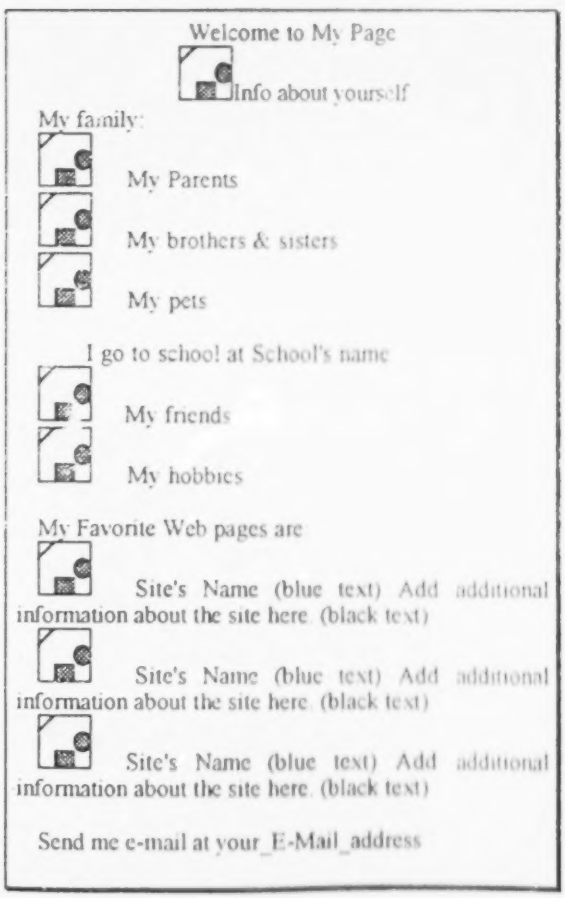
constructivists' methods were employed. The students were encouraged to explore different websites and select their favorite websites.

After searching on the net, the students began creating their own webpages. Similarly, the behaviorists' methods were first used and then followed by the constructivists' methods. The students learned and practiced the basics of Netscape Gold including (1) creating an HTML file, (2) inserting images, (3) linking websites, and (4) viewing their files in a browser. Then they were encouraged to explore other features in the editor, such as putting in a background color and making a table.

Project

The students were given the project to create their personal webpages. Initially, they were introduced to a template (see Figure 1) which guided them to introduce themselves, their families, friends, schools, and hobbies. The template also directed them to insert images and to link to other websites.

Figure 1
THE WEBPAGE TEMPLATE


Welcome to My Page
Info about yourself
My family:
My Parents
My brothers & sisters
My pets
I go to school at School's name
My friends
My hobbies
My Favorite Web pages are
Site's Name (blue text) Add additional information about the site here. (black text)
Site's Name (blue text) Add additional information about the site here. (black text)
Site's Name (blue text) Add additional information about the site here. (black text)
Send me e-mail at your_E-Mail_address

Afterwards, each student could decide whether to continue modifying the template for their final project or whether to create a new webpage without using the template. The students were free to follow their own creativity, inserting their favorite pictures and animations, linking to websites of their interest, and designing the layout of their pages. The final projects were presented in class, and the students received comments from their peers.

The Research Study

The researcher used action research methods to conduct the study. She observed the children searching on the Internet and asked them why they were in favor of certain websites. She also observed the children developing their webpages and asked them to explain their designs. After the students completed their webpages, the researcher downloaded all the images and categorized them according to the students' names and genders. The number of pictures, animations, background colors, and text colors on the children's webpages were calculated. The webpage development was only one of the class projects, and the children did not have much time to work on their projects as they would have liked to. Therefore, the research data was limited. However, the research finding was interesting and helpful.

Results

It was found that websites providing more visual input attracted the students more. The children liked websites with colorful pictures, animations, and music, and tended to explore those websites longer. Furthermore, they used more images or animations from those websites than other websites for their own webpage development.

Table 1
THE NUMBER OF PICTURES, ANIMATIONS, AND TEXT COLORS ON STUDENTS' WEBPAGES

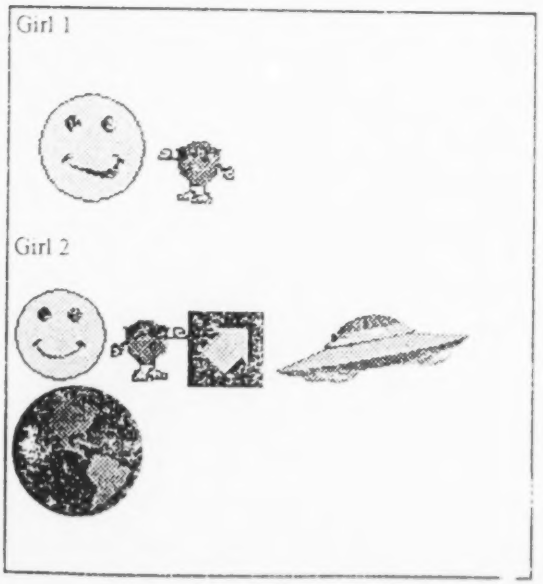
	No. of Pictures	No. of Animations	No. of Text Colors
S1	1	2	15
S2	0	2	7
S3	13	1	10
S4	2	1	2
S5	28	1	3
S6	2	3	2
S7	10	5	3
S8	2	11	6
S9	2	1	3
S10	1	3	13
S11	3	1	5
S12	0	14	4

When the students created their own webpages, they liked to use a variety of colors and animations. All but one student used background colors; five of them put different background colors on different pages; three of them used images as background colors. All of them used at least two text colors, and three of them employed more than ten colors for their text. Table 1 above summarizes the number of pictures, animations, and text colors that each student used on his/her webpage.

The webpages of the girls frequently contained sweet and cute graphics, such as smiling faces (see Figure 2). The girls also included pictures of themselves and their families. Their background colors were soft, like pink and light yellow. They used more words than boys to describe their families, friends, siblings, and pets on their webpages. The background colors of the boys were stronger than the girls'. One boy used a helmet of a knight as a background. Other boys used dark blue, dark purple, and black as background colors. The visual images on their webpages were also very different from the girls' images. The boys had more scary graphics, such as a distorted face or moving eyeball (see Figure 3). Every boy had on his webpage at least one picture of the following: machine, weapon, fight, knight, skeleton, and combat. Those pictures never appeared on the pages of the girls in this class.

Below are all images the children used on their webpages. Personal and family pictures were removed from the list. Fewer images appear in the girls' section because many images were family pictures. Only one image is displayed if the image was repeatedly used by the same student.

Figure 2
THE GIRLS' IMAGES



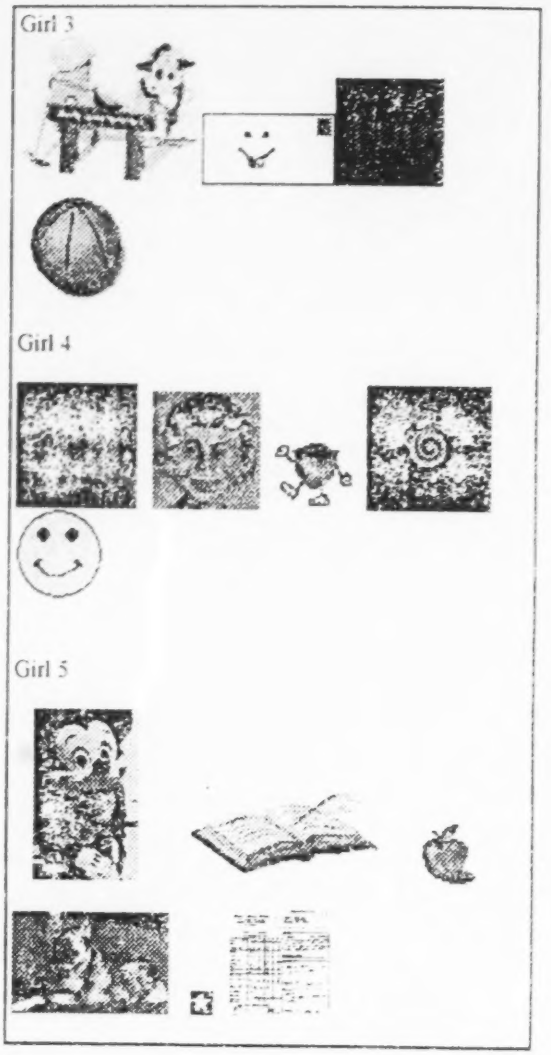
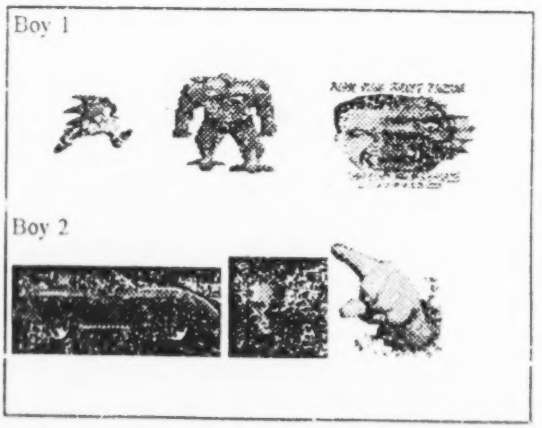


Figure 3
THE BOYS' IMAGES



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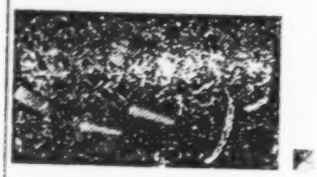
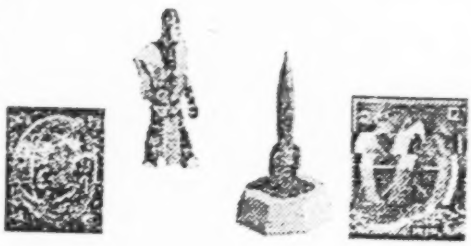
Boy 3

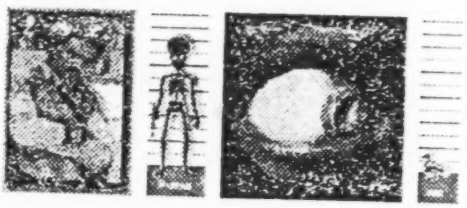


Boy 4

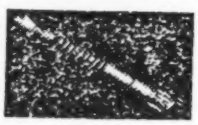
Boy 5

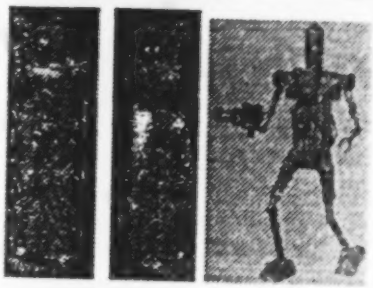


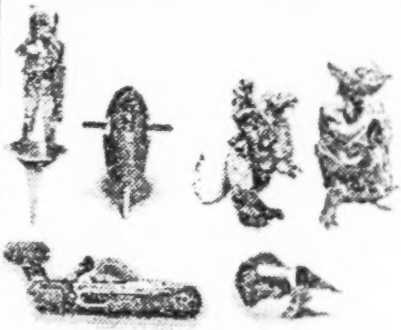
Boy 6



Behind the Scenes







Boy 7

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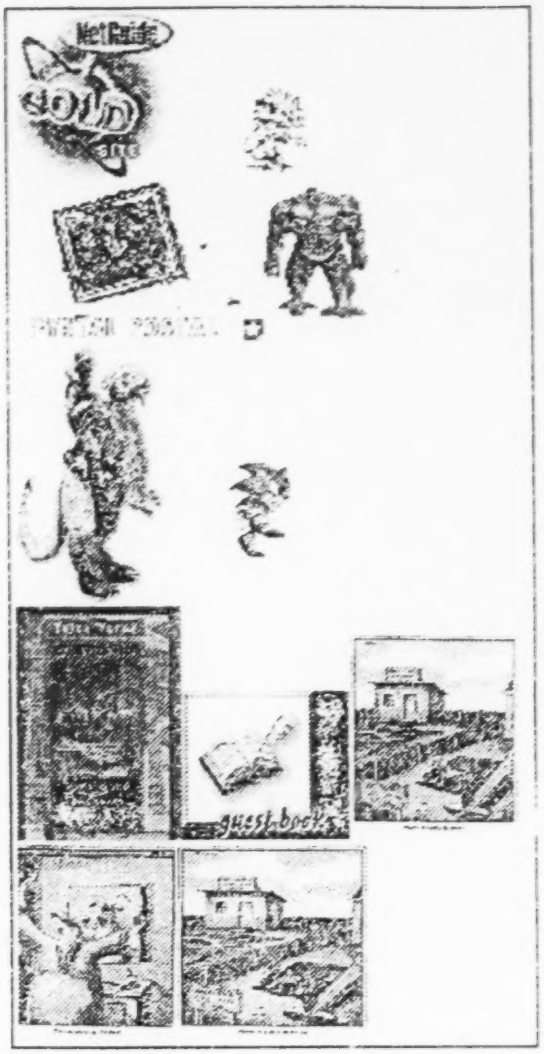

In general, the children were interested in visual aspects, they liked to scan pictures. Several students returned with additional pictures which were scanned and included in their webpage. During the presentation of each student's final project, the classmates commented on the webpage design. Most criticism targeted the use of colors, text and background. The most pride was taken in scanned images and animations.

Discussions

After reviewing the list of images, one can tell that the boys and the girls used very different images on their webpages. In the class, one of the boys often made noise and had troubles following the instruction. His webpage caught the instructor's (the researcher's) attention for his action-oriented images. The webpages of several girls looked as graceful and gentle as the girls. The pages were mirrors reflecting the children's characters, interests, and inner world.

The researcher wished to have had more time to understand the boy mentioned above. Unfortunately she met the children only once a week. A class teacher might better understand children by reviewing their webpages or any of their projects involving visual images. It is suggested that teachers encourage children's creativity and imagination using visual images which might open a door for professionals to enter the children's inner world and to better help them.

A webpage is like a piece of paper on which children can creatively draw, paint, and compose; it is like a piece of wood which children can carve as they like; it is also like clay from which children can, according to their wishes, sculpture objects. Like poets and artists, children can let their imagination and creativity fly and grow in this free and unconfined area. Should an instructor require children to follow rules of webpage screen design? Must an instructor require children to take care of the spelling and grammar on their webpages? Answers might vary depending on individuals. Might a webpage, whose screen design is considered to be bad by adults, be appropriate for children? Must a person conducting creative writing at the beginning stage be concerned about the mechanics, such as spelling and grammar? Let us leave these questions to individual instructors to answer and let them decide if and when they should be concerned about those issues in their instruction.

Surely, creating a good webpage is important for children. They might have different criteria for judging the quality. It is suggested to conduct peer evaluation to help children create appealing webpages.

As mentioned earlier, the research data was limited due to the time length of the course. It is recommended that researchers collect data from bigger projects (webpages containing more data) for a longer period of time.

Conclusion

The Internet is now a common part of the world of children, especially because of the attractive and motivating visual images. These features can lead the children to useful information and learning resources. The webpage development empowered the children to become part of the global World Wide Web and allowed learners to communicate their inner world verbally as well as visually to people. Through the process and development, children creatively expressed themselves and invited people to learn about their interests and the view of their world.

The class connected visual images, learning theories, such as behaviorism and constructivism, and young learners. The outcome of the course was the class project—and more importantly students creatively expressing themselves. The Internet allows children not only to passively consume visual images, but also

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to actively create and interact with visual images. Eyes are windows to the soul. Visual images are the windows which enables people to express themselves and to be understood. One can only imagine the long-term impact of visual images on our society.

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